

# LIVERPOOL INVESTMENT LETTER

February 2023



Cardiff Business School

Ysgol Busnes Caerdydd

**Julian Hodge Institute of Applied Macroeconomics**



**LIVERPOOL RESEARCH GROUP IN MACROECONOMICS**

## LIVERPOOL RESEARCH GROUP IN MACROECONOMICS

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The Julian Hodge Institute was launched in autumn 1999 in a new collaboration between the Cardiff Business School of Cardiff University and Hodge. The aim of the Institute is to carry out research into the behaviour of the UK economy, and to study in particular its relationship with the other economies of Europe. The research has been particularly germane in recent years and has proved to be of significant social and political relevance as Europe has navigated the difficulties of the global financial crash, the Eurozone crisis and most recently the UK referendum on EU membership. The Liverpool Investment Letter is written by Patrick Minford, with the assistance of other members of the Group; in particular the emerging markets section is written by Anupam Rastogi, and the focus on Japan is written by Francesco Perugini. The Investment Letter is published monthly.

The Liverpool Research Group in Economics is pursuing a research programme involving the estimation and use of macroeconomic models for forecasting and policy analysis. The Group is now mainly based in Cardiff Business School, Cardiff University, and is indebted to the School and to the Hodge Foundation for their support. The Group's activities contribute to the programmes being pursued by the Julian Hodge Institute of Applied Macroeconomics. This Liverpool Investment Letter is typeset by David Meenagh and published on behalf of the group by Liverpool Macroeconomic Research Limited, which holds the copyright

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<p>The Chancellor refuses to see sense over the proposed rise in Corporation Tax in the coming budget. This is defended as necessary both to maintain the UK's market reputation, supposedly damaged by the Truss government, and to bring down inflation. But neither is the case. The UK's CDS rate has remained low throughout recent months, while prospective inflation is coming down steadily. Raising corporation tax is damaging growth and revenues and driving away company investment.</p>	
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# THE ECONOMY IS FLATLINING AND GROWTH PROSPECTS ARE DIM

The Sunak/Hunt regime is determined to stick with a restrictive fiscal policy, on the grounds that this is necessary to head off inflation and to remain solvent. The result is the economy running flat if not into overt recession in the short term, and with corporation tax due to rise in the Budget to 25%, weak growth in the longer term.

The grounds given are easily refuted. First, inflation. This is under the control of the Bank, which has raised interest rates sharply to bring inflation down to its 2% target. Its success in this is now widely expected, with monetary tightening having brought broad YOY money supply growth down close to zero — see UK M4 Growth chart on the next page. Furthermore, the commodity price spikes that caused the sharp rise in costs are being reversed by worldwide monetary tightness, as well as the end of Covid and energy demand adjustment to the continuing Ukraine war — see chart below.

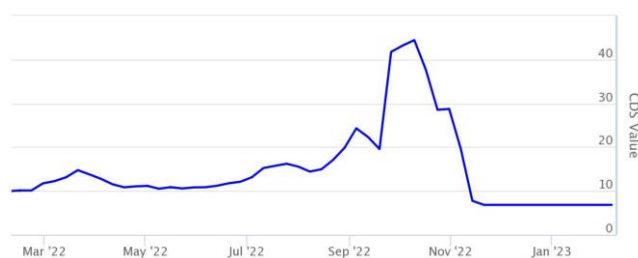
**Commodity Price Index (Dollar)**  
(Economist, 2015 = 100)



As for the contribution of fiscal policy restriction to inflation, this if anything will push it up through its direct effect on wage settlements. But in any case, its effect is second order.

As for solvency, the UK's market reputation remains strong and hardly altered during the Truss government — see chart following.

United Kingdom — 5 year CDS



Source: [www.worldgovernmentbonds.com](http://www.worldgovernmentbonds.com)

**Table 1: Summary of Forecast**

	2019	2020	2021	2022	2023	2024	2025
GDP Growth <sup>1</sup>	1.4	-11.0	7.5	4.2	-0.4	2.0	2.0
Inflation CPI	1.7	1.0	2.5	8.9	5.0	3.2	2.0
Wage Growth	3.5	1.6	5.8	6.0	5.4	3.4	3.0
Survey Unemployment	3.8	4.5	4.5	3.6	3.5	2.8	2.8
Exchange Rate <sup>2</sup>	78.3	78.2	81.5	79.4	78.1	77.4	76.8
3 Month Interest Rate	0.8	0.2	0.1	1.8	4.4	4.0	3.0
5 Year Interest Rate	0.6	0.1	0.4	2.3	4.3	4.0	3.0
Current Balance (£bn)	-63.3	-67.5	-34.3	-111.2	-24.2	-14.7	1.5
PSBR (£bn)	64.3	312.4	132.4	156.6	124.9	59.5	3.2

<sup>1</sup>Expenditure estimate at factor cost

<sup>2</sup>Sterling effective exchange rate, Bank of England Index (2005 = 100)

To put this in context, the following table shows the latest UK rate is under 7% while Italy's is over 90%. During the Truss period the UK rate peaked at 40%, compared with an Italian peak last July of nearly 200%. The reason that UK long term interest rates rose sharply during the Truss period was not solvency worries but concern that inflation would rise sharply and trigger much higher interest rates. That concern has turned out to be groundless, as we argued at the time; the Bank too expected to put rates up much less.

Country	S&P Rating	5 Years Credit Default Swaps
United Kingdom	AA	6.82
Germany	AAA	7.58
Austria	AA+	7.64
Netherlands	AAA	9.15
Belgium	AA	10.22
Ireland	AA-	14.85
Japan	A+	17.12
France	AA	22.50
Australia	AAA	27.28
United States	AA+	32.52
Portugal	BBB+	38.61
Canada	AAA	39.23
Spain	A	45.17
China	A+	53.85
Italy	BBB	92.58
Greece	BB+	92.63
Indonesia	BBB	96.96
Mexico	BBB	109.89
Brazil	BB-	223.30
Turkey	B	540.07
Egypt	B	542.70
Russia	NR	13775.17

Source: [www.worldgovernmentbonds.com](http://www.worldgovernmentbonds.com)

In any case, the situation today is one where solvency is not an issue and inflation is expected to be low. So where is the risk in pursuing a fiscal policy that supports the economy and avoids the damage to growth of raising corporation tax in this budget?

### **Treasury mistakes and misleading fiscal rules**

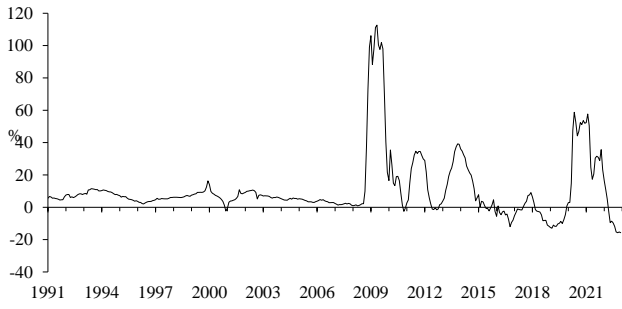
The Treasury and Chancellor have maintained that the fiscal rules offer no scope for fiscal easing. Yet these rules are supposed to ensure solvency, which we have seen is not a problem. In effect, the rules have been set artificially tight by choosing a poor criterion, that the debt/GDP ratio should be falling in 2027/28 fiscal year. This date is arbitrary. To check solvency according to economic theory one should look at the long term, i.e. at least a decade ahead, to check that the debt/GDP ratio is on a downward trend by then. It turns out that the key requirement for this is that growth should be adequate; at say 2% growth there is no problem because this produces solid growth in net tax revenues, which then outpace likely growth in public service needs.

The Treasury argues that inflation on index-linked bonds and Bank interest rate increases have raised debt interest and that the Bank sell-off of long term gilts has created a capital loss that costs the Treasury money in refunds. All of

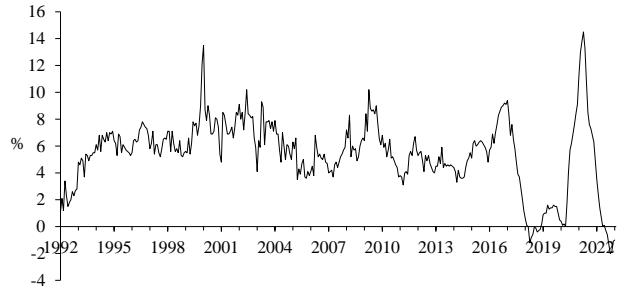
this is smoke and mirrors. Index-linked bond values fall in real terms with inflation, exactly offsetting the inflation compensation they pay. Because government debts are mostly long term, interest on them only rises when they mature which is long into the future. But the Treasury permits the Bank to pay interest on bank reserves held with it, which is quite unnecessary as these reserves are only convertible into cash; it is for this reason that the Bank is paying out a huge amount in interest to banks, to the tune of some £30 billion a year, so unnecessarily lumbering the taxpayer with an immediate extra interest rate bill. As for the 'capital losses' the Bank makes on its debt sales, these are not a cost to the public sector as the Treasury makes an equal capital gain; government debts the Bank holds cancel out in the public sector balance sheet, as do any payments between Bank and Treasury.

We are faced here with deliberate obscurantism by the Treasury and the Bank, essentially due to officials pursuing their own agenda, maintaining their bureaucratic power. For the Treasury this comes from 'tight finances'. For the Bank it comes from independence in defending its own City turf. Neither of these are in the public interest.

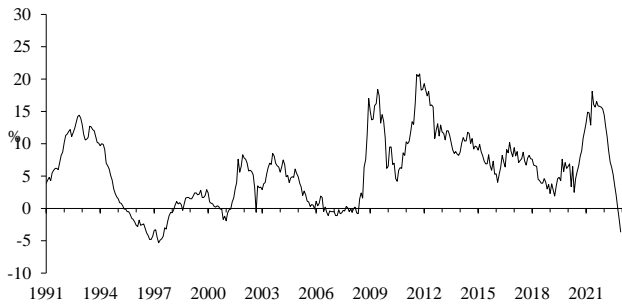
**U.S.: Growth in M0 (Yr - on - Yr)**



**UK: Notes and Coins in Circulation Growth**



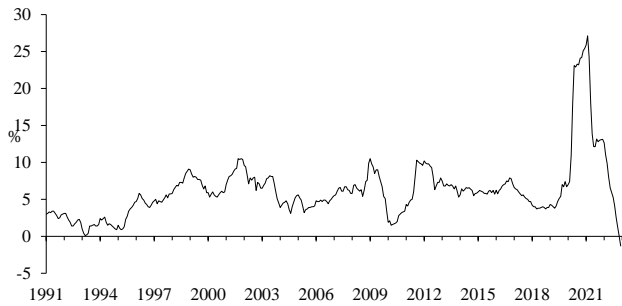
**U.S.: Growth in M1 (Yr - on - Yr)**



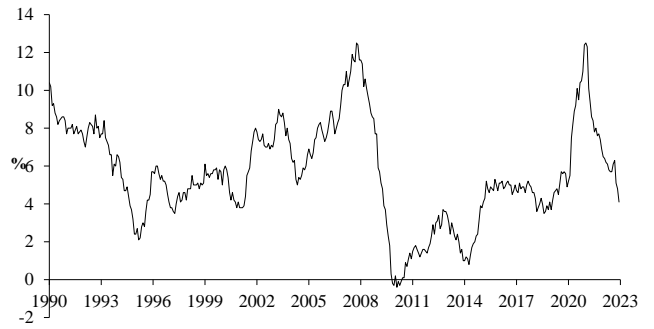
**UK: M4 Growth**



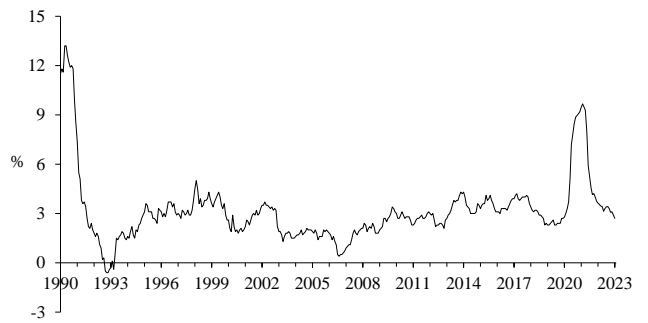
**U.S.: Growth in M2 (Yr - on - Yr)**



**Eurozone M3 Growth**



**Japan: Growth of M2+CD's**



## FOCUS ON JAPAN

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Francesco Perugini

### Speculation increases as BOJ Governor term is upcoming.

According to latest data, the Bank of Japan (BOJ) bought a record ¥23.69 trillion (\$182 billion) worth of government bonds last month, underscoring its resolve to defend its yield cap from attack by investors betting on a near-term interest rate hike. The BOJ's bond buying was the biggest amount on record and exceeded the previous high of ¥16.2 trillion in June 2022. The massive buying highlights the increasing difficulty the central bank faces in sustaining its yield control policy, as inflation perks up well above its 2% inflation target.

With its heavy-handed intervention drying up bond market liquidity, the BOJ is increasingly relying on a new funds-supply tool to keep the 10-year yield from breaching its 0.50% ceiling. Under yield curve control, the BOJ guides short-term interest rates at -0.1% and the 10-year bond yield around 0%. The BOJ's decision in December to widen the allowable band around the 10-year yield target heightened market expectations of a near-term rate hike, forcing the bank to ramp up bond buying to defend the newly set 0.5% cap for the 10-year yield. Under pressure to iron out market distortions caused by its heavy bond buying, the BOJ remodelled in January a funds-supply operation into a tool to prevent yields from rising too much.

Some analysts, however, see such steps as a stop-gap effort to buy time until a new BOJ governor, who succeeds incumbent Haruhiko Kuroda in April, begins deliberations to revamp yield curve control. "The BOJ is trying all available means to defend yield curve control but in doing so is increasing, not reducing, distortions in the bond market," said Naomi Muguruma, senior market economist at Mitsubishi UFJ Morgan Stanley Securities. "It's become a widely shared view in the market that yield curve control won't be sustained under the new BOJ leadership. It would be a huge surprise if the BOJ doesn't tweak yield curve control in April," she said.

At the end of last month, the BOJ pumped five-year loans worth 1 trillion yen against collateral to financial institutions, in its second such operation with the remodelled tool. While the BOJ has so far offered only two- and five-year loans, the BOJ can offer funds as long as 10 years with the revamped funds-supply operation. "Depending on market conditions, an offer of long-term funds such as 10-year loans cannot be ruled out," a source familiar with the BOJ's thinking said, a view echoed by another source. While offering such long-term loans will be a fresh sign of the BOJ's determination to maintain yield curve control, the impact of the move on bond yields may be short-lived as markets continue to price in the chance of a near-term rate hike, some analysts say. The 10-year bond

yield stood at 0.48% on Wednesday, remaining close to the BOJ's 0.5% cap.

In the meanwhile, the government is expected to present its nominees for the new BOJ governor and two deputies to parliament later this month as Kuroda's term ends on April 8, and that of his two deputies on March 19. Kuroda chairs his final BOJ policy meeting on March 9–10. His successor's first meeting will be held on April 27–28 with career central bankers Masayoshi Amamiya and Hiroshi Nakaso seen as strong contenders.

There is speculation for policy adjustment as investors bet on the likelihood of a new direction after Kuroda steps down on April 8. However, speaking during a panel session at the World Economic Forum in Davos, last month Kuroda pushed back speculation, saying that it was "not wrong" for the BOJ's board to widen its tolerance range for the yield on its 10-year government bond from 25 basis points to 50 basis points in December. He signalled the hottest inflation since 1981 has no impact on his determination to continue with monetary easing. "Our hope is that wages start to rise and that could make the 2% inflation target to be met in a stable and sustainable manner, but we have to wait for some time." Kuroda said current inflation is led mainly by import-price increases, and that it's likely to start cooling from next month. Moreover, Kuroda has repeatedly argued that price increases have not led to a sustainable rise in wages and that easing is needed to support the economy amid risks of a slowdown outside Japan.

With just one policy board meeting in March before Kuroda steps down, the future of his signature policy of bond yield curve control and of negative interest rates will be firmly in the hands of his successor. "The new governor will need to be more persuasive than Kuroda in explaining to overseas investors why it's difficult for Japan to sustainably reach its 2% inflation target," said Kazuo Momma, a former head of monetary policy at the BOJ, who is now executive economist at Mizuho Research Institute. "The biggest issue is for the BOJ to communicate to markets that it will continue with monetary easing at least until the first half of the year or throughout 2023," he said. Other economists however believe that the next BOJ governor should shift away from the monetary stimulus launched in 2013. "The government is likely to choose the next governor from the viewpoint of who can carry out normalisation of policy," said Ayako Fujita, chief Japan economist at JPMorgan Securities. Overall, it is going to be an arduous term for the next BOJ Governor: he/she will face a demanding environment and will have a difficult task to reach and maintain the 2% inflation target and promote sustainable economic growth.

## MARKET DEVELOPMENTS

World growth is reviving as China ends its Covid zero policy and is backing away from a wide range of other growth-damaging policies. Until the current money-

tightening agenda has settled down into a new normal interest rate world, bonds remain a risky investment.

**Table 1: Market Developments**

	Market Levels		Prediction for Nov/Dec 2023	
	Jan 10	Feb 22	Previous Letter View	Current View
<b>Share Indices</b>				
UK (FT 100)	7694	7978	8218	8265
US (S&P 500)	3896	4012	4056	4140
Germany (DAX 30)	14775	15398	19635	18508
Japan (Tokyo New)	1881	1997	2597	2575
<b>Bond Yields (government)</b>				
UK	3.41	3.64	3.20	4.00
US	3.57	3.94	3.50	3.50
Germany	2.21	2.53	2.20	2.20
Japan	0.50	0.50	0.30	0.50
UK Index Linked	0.44	0.51	1.00	1.00
<b>Exchange Rates</b>				
UK (\$ per £)	1.21	1.21	1.20	1.20
UK (trade weighted)	77.91	78.28	77.9	77.9
US (trade weighted)	107.33	107.88	113.2	113.2
Euro per \$	0.93	0.94	0.98	0.98
Euro per £	1.13	1.14	1.18	1.18
Japan (Yen per \$)	132.19	134.72	140.0	140.0
<b>Short Term Interest Rates</b>				
UK	3.95	4.22	3.00	4.00
US	4.78	4.91	4.00	4.03
Euro	2.27	2.65	2.60	3.00
Japan	-0.03	-0.03	0.10	0.10

**Table 2: Prospective Yields<sup>1</sup>**

<b>Equities: Contribution to £ yield of:</b>						
	Dividend Yield	Real Growth	Inflation	Changing Dividend Yield	Currency	Total
UK	2.10	1.1	3.5	-1.00		5.70
US	2.00	1.2	3.0	-1.00	1.15	6.35
Germany	2.10	1.2	3.0	16.00	-3.50	18.80
Japan	1.90	1.1	1.8	26.00	-2.73	28.07
UK indexed <sup>2</sup>	0.51		3.5	16.00		20.01
Hong Kong <sup>3</sup>	2.60	3.0	3.0	-43.00	1.15	-33.25
Malaysia	3.30	5.4	3.0	47.00	1.15	59.85
Singapore	3.50	3.0	3.0	11.00	1.15	21.65
India	1.40	6.5	3.0	6.00	1.15	18.05
Korea	1.10	0.0	3.0	-52.00	1.15	-46.75
Indonesia	2.20	4.5	3.0	15.00	1.15	25.85
Taiwan	2.80	3.0	3.0	16.00	1.15	25.95
Thailand	3.20	2.5	3.0	12.00	1.15	21.85
<b>Bonds: Contribution to £ yield of:</b>						
	Redemption Yield	Changing Nominal Rates	Currency	Total		
UK	3.64	-3.60				5.04
US	3.94	4.37		1.15		9.45
Germany	2.53	3.34		-3.50		2.37
Japan	0.50	0.04		-2.73		-2.19
<b>Deposits: Contribution to £ yield of:</b>						
	Deposit Yield	Currency	Total			
UK	4.22		4.22			
US	4.91	1.15	6.05			
Euro	2.65	-3.50	-0.85			
Japan	-0.03	-2.73	-2.76			

<sup>1</sup> Yields in terms of €s or \$s can be computed by adjusting the £-based yields for the expected currency change.

<sup>2</sup> UK index linked bonds All Stocks

<sup>3</sup> Output based on China.



**Table 3: Portfolio(%)**

	Sterling Based Investor		Dollar Based Investor		Euro Based Investor	
	January Letter	Current View	January Letter	Current View	January Letter	Current View
UK Deposits (Cash)	5	5	5	5	1	1
US Deposits	-	-	-	-	-	-
Euro Deposits	-	-	-	-	-	-
Japanese Deposits	-	-	-	-	-	-
UK Bonds	-	-	-	-	-	-
US Bonds	-	-	-	-	-	-
German Bonds	-	-	-	-	-	-
Japanese Bonds	-	-	-	-	-	-
UK Shares	19	19	14	14	17	17
US Shares	14	14	19	19	16	16
German Shares	14	14	14	14	21	21
Japanese Shares	9	9	9	9	11	11
Hong Kong/Chinese Shares	4	4	4	4	4	4
Singaporean Shares	4	4	4	4	4	4
Indian Shares	4	4	4	4	4	4
Thai Shares	3	3	3	3	3	3
South Korean Shares	4	4	4	4	4	4
Taiwanese Shares	4	4	4	4	3	3
Brazilian Shares	4	4	4	4	3	3
Chilean Shares	4	4	4	4	3	3
Mexican Shares	4	4	4	4	3	3
Peruvian shares	4	4	4	4	3	3
Other:						
Index-linked bonds (UK)	-	-	-	-	-	-

# INDICATORS AND MARKET ANALYSIS

## FOREIGN EXCHANGE MARKETS

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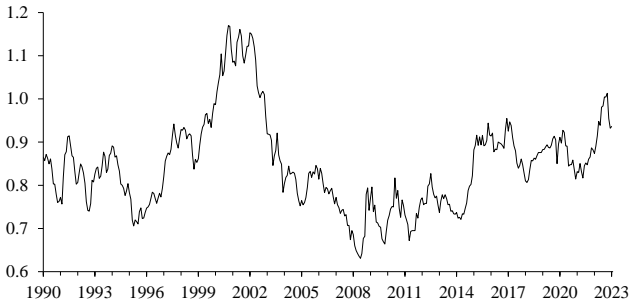
**US : Trade Weighted Index  
(Bank of England 1990 = 100)**



**UK: Dollars Per Pound Sterling**



**Euro per US dollar**



**UK: Trade-Weighted Index  
(Bank of England 1990 = 100)**



**Japan : Yen Per U.S. Dollar**

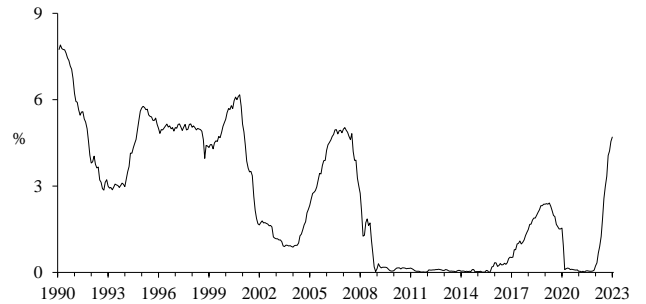


# GOVERNMENT BOND MARKETS

**U.S.: Yield on Long-Term Government Bonds**



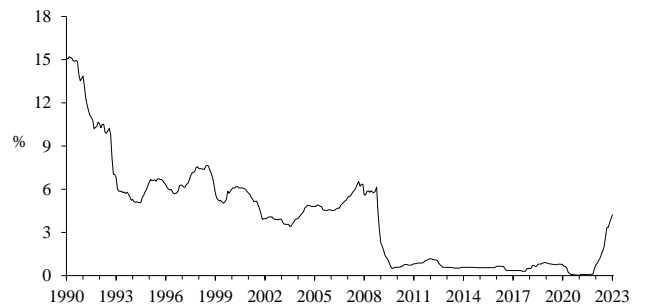
**U.S. : 3-Month Treasury Bill**



**U.K.: Yield on Long-Term Government Bonds**



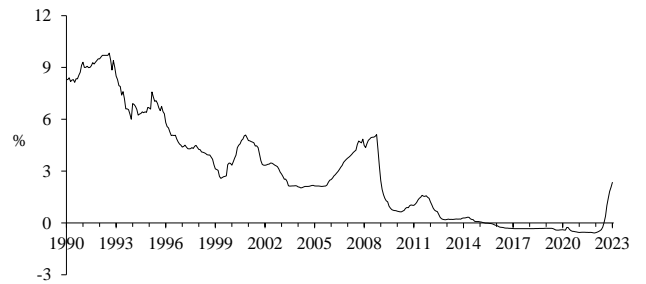
**U.K. : 3-Month Certificate LIBOR Rate**



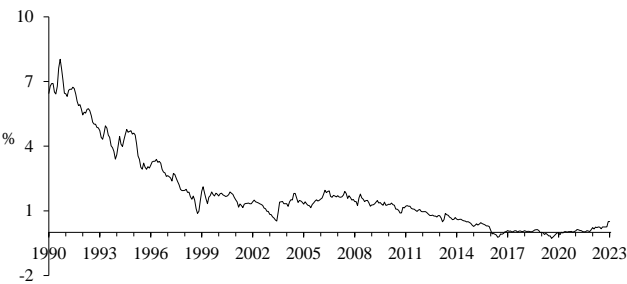
**Germany: Yield on Public Authority Bonds**



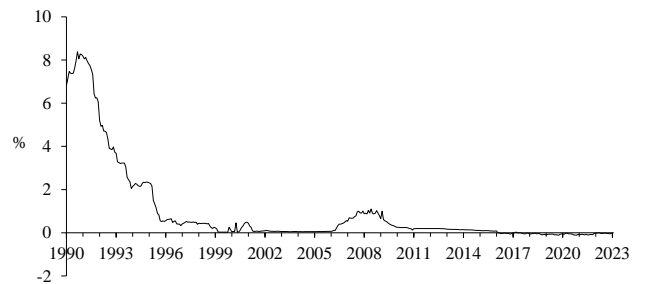
**Germany : 3-Month Interbank Deposit Rate**



**Japan: Yield on Long-Term Government Bonds**



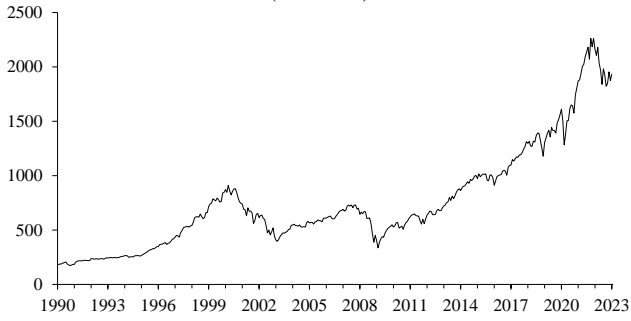
**Japan : 3-Month Money Market Rate**



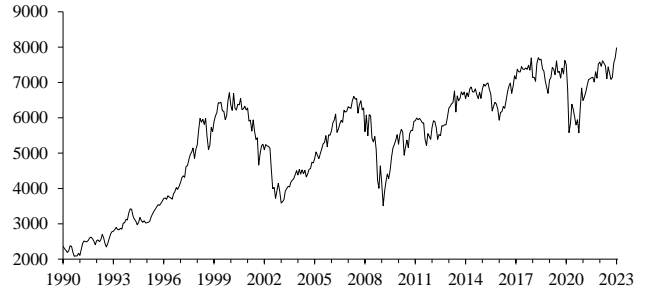
# MAJOR EQUITY MARKETS

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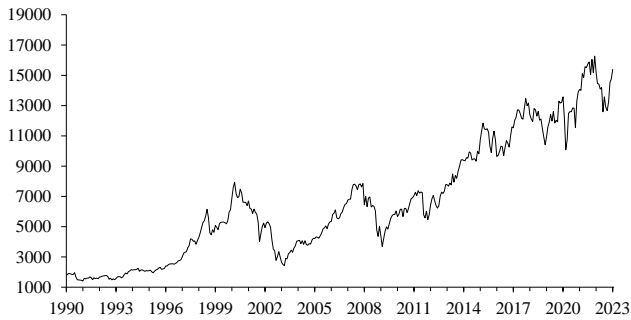
**U.S. : S & P 400 Industrial  
(1985=100)**



**U.K. : FTSE-100 Index  
(10 April 1962=100)**



**Germany : DAX 30**



**Japan : Tokyo S.E. New  
(1985=100)**



## EMERGING MARKETS

Anupam Rastogi

### India

On February 1, the government presented the fiscal year 2023–24 budget in parliament. Even though it was a pre-election budget for the Narendra Modi government, there were no electoral giveaways. The budget was aimed at showing that India can deliver on its promises. Their emphasis on the manufacturing sector is bolstered by providing production-linked incentives to those who set up factories in India. Prominence in this budget was on job creation. The government realizes that demographic dividends can be cashed if the private sector creates jobs.

The budget is a pro-growth budget without sacrificing fiscal prudence. Fiscal consolidation is to continue to walk on that path. The government achieved its fiscal deficit target of 6.4% of GDP, although its revenue expenditure rose more than budgeted. In 2023–24, the government targets a lower fiscal deficit of 5.9% of GDP and intends to lower the fiscal deficit to below 4.5% by 2025–26. The government also proposed boosting capital spending by more than a third to 10 trillion rupees (\$122.3 billion) next fiscal year to pay for infrastructure projects. The government has set green growth as a priority sector for itself; this includes green fuel, green energy, green farming, green mobility, green buildings, and green equipment. Cuts in personal income taxes help the middle class and generate domestic demand.

Policy stability has been maintained, with no significant changes/deviations in the tax structure, barring taxable income raising and incentivizing tax payments to the new, simplified scheme. The emphasis on reducing the compliance burden has been kept using technological means. Markets welcomed an unchanged capital gains tax regime.

A confluence of international and domestic factors is allowing India to catch up. Internationally, manufacturers are looking to reduce their dependency on China. Prime Minister Narendra Modi wants broader prosperity than the cyber economy can provide. Years of investment in highways, railroads, and ports combined with regulatory reforms have reduced, if not eliminated, the obstacles that long kept foreign manufacturers at bay. A few signs of success are visible. Apple Inc. and other manufacturers have started their operations in India. India has become the world's most-populous nation with a young and growing workforce eager to fill factories.

The tailwinds of the US and Japan's policies to contain China militarily boost investments from these countries at very favourable terms and conditions. The US and Japan know that ultimately, in the event of military engagement,

India: BSE Sensex



only India can provide boots on the ground. Hence, American trade policy adjusts to the new era of great-power competition; it ensures that made-in-India products have access to American markets.

India pegged nominal GDP growth at about 11% in the Budget 2023. The real GDP growth is expected to be under 6.5%. Not surprisingly, on the side-lines of the World Economic Forum in Davos, Switzerland, a long-range forecast by Ernst & Young estimates that India's GDP will reach \$26 trillion (in market exchange terms) and its per capita income will touch \$15,000 by 2047. Many at the World Economic Forum in Davos described India as a bright spot on the world stage.

The government estimated a GDP growth of 7% in the current fiscal year. It makes India one of the fastest-growing large economies in the world. The seasonally adjusted S&P Global India Manufacturing Purchasing Managers' Index (PMI) stood at 55.4 in January, sliding from December's high of 57.8. The S&P Global India services PMI fell to 57.2 in January from 58.5 in December. Despite the fall, the headline figure remained well above the 50-mark, separating growth from contraction for the 19th and 18th straight month for manufacturing and services PMI, respectively.

India's Consumer Price Index (CPI) based inflation in December eased marginally to 5.7% from 5.9% a month ago, staying within the RBI's tolerance range of 2–6%. Core inflation strips out the volatile components of food and fuel and has remained around 6% since May 2022. We expect the RBI to raise its repo rate by 25 basis points in its February 6–8 Monetary Policy Committee meeting. The RBI wants to curb inflation as it directly impacts the common man's household budget and job prospects.

During April–December 2022–23, exports rose 9% to USD 333 billion, while imports increased 25% to USD 552 billion. The trade deficit during the nine months widened to USD 219 billion against USD 137 billion in April–December 2021–22. Last fiscal year, the country's

merchandise shipments touched an all-time high of USD 422 billion. Lead indicators suggest that the domestic current account deficit is likely to reduce in 2023, while macroeconomic stability has received a boost from inflation being brought back to the official tolerance band.

The Indian rupee moved in a tight range against the US dollar. The currency is expected to remain between 82–83 INR to the US dollar. The INR ended the year as one of the worst-performing Asian currencies. It depreciated 11.3% against the USD.

Foreign investors continue to cut their exposure to India as they find valuations very rich and the increasing attractiveness of Chinese and South Korean stocks. Last year, foreign investors sold a net \$16.4 billion in shares in India's stock market. Foreign ownership of companies in India's Nifty 500 index dropped to its lowest level in five years, hitting 18% in September 2022. Mutual fund flows into India's stock market from domestic investors have more than covered outflows from foreign investors.

Staff for US President Joe Biden and Indian Prime Minister Narendra Modi are discussing a possible state visit to Washington just before the Group of 20 leaders' summit in New Delhi in September. While the White House has not yet confirmed Biden's plans, the US president customarily attends the meeting.

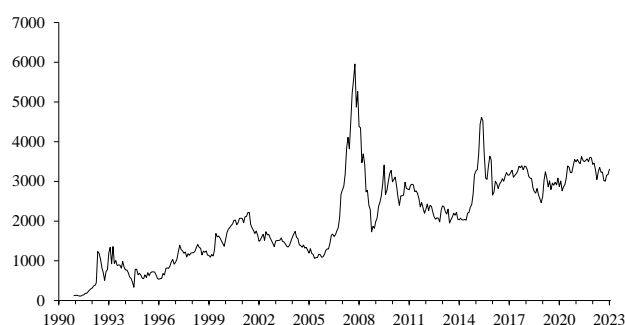
	20–21	21–22	22–23	23-24	24-25
GDP (% p.a.)	-6.6	8.7	7.0	6.5	6.5
WPI (% p.a.)	5.5	6.0	6.5	5.3	5.0
Current A/c(US\$ bill.)	35.0	-42.0	-100.0	-90.0	-80.0
Rs./\$(nom.)	75.0	74.5	81.0	83.0	85.0

## China

China is passing through the Covid-19 super spreader event as hundreds of millions of people are headed home for the Lunar New Year holiday for the first time since 2019. Information on the spread of Covid-19 is sparse. There is hardly anyone in Shanghai and other metropolitan cities which does not know someone who is no more; people who cannot get life-saving drugs and hospital services are overwhelmed by Covid-19 patients. It is very similar to what India passed through in May 2022. People are bearing it stoically. They know that there is light at the end of the tunnel and a feeling that in a few months, things will be normal. Eighty percent of people in China had already been infected with COVID-19 before the Lunar New Year festivities began, according to the country's chief epidemiologist.

Rural China is susceptible to harm from the ongoing Covid-19 super spreader event. Nearly one in four residents are aged 60 or older, a group that's comparatively less vaccinated and more likely to develop complications. It will take years before accurate pictures and mortalities will become available.

China: SSE Composite Index



The government has reset in almost all economic and social spheres now. The government has lifted all pandemic restrictions. Beijing's focus is on boosting domestic demand, leading to more imports from the country's trading partners, such as Taiwan and South Korea. The government has pencilled in greater than 5% growth in the gross domestic product in 2023. Of course, economic and social agenda centred on "common prosperity" will remain. The government's intentions are supported by manufacturing and services sector data. Manufacturing activity measured by the official purchasing managers' index rose to 50.1 in January from 47.0 in December. Since the result is above 50, it implies growth. The non-manufacturing growth activity was even more pronounced as a seasonal surge helped it in spending for the Lunar New Year holiday. The non-manufacturing index surged to 54.4 in January from 41.6 in December.

China's economy expanded by 3% in 2022, the second-worst growth rate since 1976. Besides this, for the first time since 1961, its population shrank in 2022. According to National Statistics Bureau, the country had 1.41 billion people at the end of last year, 850,000 fewer than at the end of 2021.

We expect a consumer-led recovery in China this year to bolster global growth as the US and Europe flirt with anaemic growth in 2023. The International Monetary Fund raised its growth outlook as it expects the Chinese economy to rebound in the year's second half. Supported by the PMI figures of January 2023, the economy will expand by 5% in 2023, fuelled by growth in consumer spending as Chinese households emerge from the pandemic with healthy savings and an improving outlook for jobs. Our forecast remains cautious compared to ADB and other investment banks, which expect GDP to grow nearly 6% in 2023.

Inflation remains well under control; the central bank is following a loose monetary policy. The bank kept the one-year loan prime rate (LPR) at 3.65% and the five-year LPR at 4.3%, unchanged from December 2022 for the fifth time. A potential side effect of the Chinese opening up is increased demand for energy and commodities, which could slow the retreat of inflation worldwide.

China’s trade surplus swelled to a record \$878 billion in 2022 as exports rose 7% despite weakening US and European demand and anti-virus controls that temporarily shut down Shanghai and other industrial centres. Exports increased to \$3.95 trillion, decelerating from 2021’s 30% gain. Imports increased only 1.1% to \$2.7 trillion, much smaller than the previous year’s 30% growth.

The growing flow of dollars into the country strained China’s central bank’s ability to manage its yuan’s exchange rate, which rose to multi-year highs against the US dollar. The Chinese yuan rose against the US dollar for the third month in January, with its value appreciating nearly 3%. A resurgent Chinese economy, depreciation of the US dollar, and market expectations that the US Federal Reserve will slow down the pace of interest rate hikes may pressure the yuan to appreciate.

The Chinese economy is facing strong headwinds from its major export markets. Its belligerent position is overflowing in its trade relations. However, Beijing has decided that it wants a reset. It wants a reset not only of its economic fortunes but also of its diplomatic fortunes because, during the Covid period, China’s reputation in the world got tainted. It is making market-friendly comments to rehabilitate itself to restore investors’ confidence in the economy. There is no policy announcement so far. An important meeting is coming up in March, the National People’s Congress, which is held once a year. From that, we will get a fully formulated policy framework.

The Chinese economy will not decouple from the rest of the world soon. But the US is determined to strip out sensitive Chinese components of crucial technologies and prevent Chinese companies from getting hold of sensitive US technologies. The policy aims to effectively shore up the US supply chain to make it less dependent on China and also to restrict the development of certain Chinese companies that are in the high-tech sphere. China will grow in 2023, but its explosive economic growth has retreated forever.

The US Treasury Secretary Janet Yellen will visit China soon to rebuild the U.S.-China relationship that deteriorated in recent years amid tensions over Taiwan and the origins of the Covid-19 pandemic. However, in the post-Ukraine and post-Covid-19 world, under Xi Jinping, nationalism will remain central, and there will be no reversal on Taiwan and no overt rejection of Russia.

	20	21	22	23	24
GDP (%p.a.)	2.2	8.1	3.0	5.0	6.0
Inflation (%p.a.)	2.5	1.8	2.5	2.5	1.5
Trade Balance(US\$ bill.)	60.0	80.0	150.0	82.0	80.0
Rmb/\$ (nom.)	6.7	6.4	6.8	6.7	6.7

## South Korea

China’s slower growth shook South Korea’s economy. It contracted in the fourth quarter of 2022 for the first time in

**Korea: Composite Index**



more than two years due to weak exports and private consumption. Gross domestic product shrank 0.4% from the prior quarter. In 2022, the economy grew 2.6% compared to 4.1% in 2021. The central bank expects the economy to grow by 1.7% in 2023. We forecast the economy to grow by just 1% this year as we hope China’s economy to look up in the second half of 2023. Growth prospects will brighten up in 2024 as the Chinese economy rebounds post-Covid.

The consumer price index was 5.2% higher in January than in the same month a year before, rising faster than the 5% rate seen in December. The Bank of Korea expects annual inflation to hover around 5% in 2023 compared to 5.1% in 2022. The bank has raised its policy interest rate by 275 basis points since August 2021 and is widely expected to implement just one more rise in the current cycle to fight inflation in early 2023. South Korea’s benchmark interest rate is 3.5%.

Exports remained weak during the early weeks of January after shrinking for a third straight month in December on sluggish global demand for memory chips and other Korean goods. The country posted its first annual trade deficit in 14 years in 2022. South Korea posted a record trade deficit in January as exports weakened further, raising concerns the economy may fall into recession amid deteriorating semiconductor demand and persistently elevated energy prices. Korean exports constitute a significant barometer of global trade as the nation produces critical items such as chips, displays, and refined oil that straddle supply chains. It may be short-lived as China rebounds in the second half of 2023.

South Korean stocks were buoyed by continued foreign buying. The market was a value pick and kept foreign buyers’ interest in the blue chips. The Korean won strengthened while the benchmark bond yield rose. The Korean won’s near 17% rally since late October may be reaching its final stages as signs of a weaker economic outlook contrast with optimism over other emerging-market peers.

South Korean President Yoon Suk Yeol stepped back on his remarks that Seoul could develop its nuclear weapons. He declared that he would focus on working closely with the US on North Korean proliferation.

	20	21	22	23	24
GDP (%p.a.)	-0.9	4.1	2.6	1.0	3.0
Inflation (%p.a.)	0.5	2.5	5.1	5.0	3.0
Current A/c(US\$ bill.)	70.0	91.0	50.0	40.0	35.0
Won/\$(nom.)	1070	1150	1450	1300	1300

## Taiwan

Demand compression in the developed world took its toll on the economic growth of Taiwan. The economy shrank 0.86% in the final quarter of 2023. Taiwan’s economy grew 2.43% for 2022 compared to 6.53% logged for 2021. It was the slowest pace for GDP growth since 2016. For 2023, the government expects a 2.75% rise in gross domestic product. In the first half of 2023, headwinds of the spread of Covid in China will keep GDP growth muted and will rebound in the second half of 2023.

The CPI will likely rise in January, especially with the arrival of the Lunar New Year holiday, but its rise should moderate further into the year. Taiwan’s inflation was 2.95% in 2022, and we expect it to taper down to 2% in 2023.

Taiwan’s exports totalled US\$480 billion, up 7.4% from a year earlier, beating the previous record of US\$446 billion in 2021. China was the largest buyer of Taiwanese goods in 2022. Covid in China and weakening global demand adversely impacted Taiwan’s exports. It may be short-lived as the world economy may have avoided a severe downturn. China is giving some reason for hope lately, as China is a significant export market of Taiwan. This week, the International Monetary Fund raised its global economic outlook partly on China’s re-opening.

Taiwan’s benchmark stock gauge entered a bull market as trading resumed after the Lunar New Year holidays, with a broad rebound in chip shares boosting foreign buying in the market. The Taiwan dollar also strengthened.

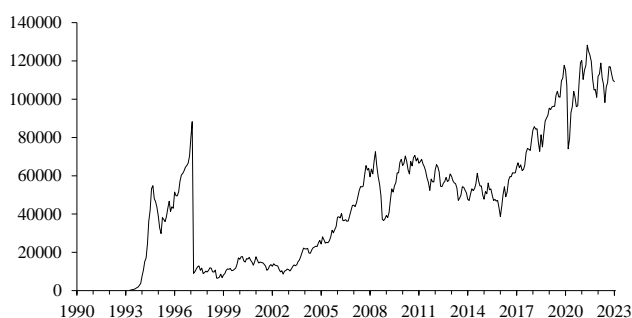
The NT dollar is expected to move between NT\$30 and NT\$31 against the US dollar in 2023. The New Taiwan dollar plunged almost 10% against the US dollar in 2022, the steepest decline in 25 years, as aggressive interest rate hikes by the US Federal Reserve strengthened the dollar.

Taiwan’s ruling party has a new leader, and the change is challenging for peace in the Indo-Pacific. Vice President Lai Ching-te, a staunch proponent of the island’s independence, took over the chairmanship of the Democratic Progressive Party from President Tsai Ing-wen. She stepped down as party leader after the party suffered losses in local elections. The probability of China’s interfering in Taiwan’s 2024 election is relatively high. China will attempt to keep Mr. Lai from winning the presidency. If he wins the presidential election, Beijing could increase its military activity in the Taiwan Strait. In the last week of January, a private warning was leaked by a US general telling his troops to prepare for a possible war with China over Taiwan in two years.

Taiwan: Weighted TAIEX Price Index



Brazil: Bovespa



	20	21	22	23	24
GDP (%p.a.)	3.1	6.5	2.4	2.8	3.0
Inflation (%p.a.)	-1.0	2.0	2.9	2.0	1.6
Current A/c(US\$ bill.)	71.0	90.0	90.0	65.0	60.0
NT\$/\$(nom.)	29.0	27.5	32.0	30.5	30.0

## Brazil

Brazil’s economy is expected to slow in 2023 as it digests changes in Lula’s administration’s economic and social policies. The probability of a recession in the first half of 2023 is clouded as commodity prices remain pretty firm, and the opening up of China will support commodity prices. Nevertheless, President Luiz Inacio Lula da Silva’s spending plan remains a key risk to Brazil’s economic growth. It will keep inflationary expectations high, and interest rates elevated beyond 2023. Lula’s government is increasing the size of welfare programs well beyond strict budget limits to address deeply-rooted social problems. Former President Jair Bolsonaro’s government also did not keep within those rules either. But that was Covid pandemic time. Brazil’s government debt as a share of the gross domestic product ended 2022 at its lowest level in more than five years. The gross debt fell to 73.5% of GDP in December from 74.6% in November, mainly led by a nominal rise in GDP.

We maintain our cautious growth forecast of zero for 2023. The main reason for our negative outlook is the fiscal policy that is being implemented. With a possible reinstatement of fuel taxes to help pay for extra spending measures, inflation will remain sticky around 5.5% in 2023, and the central bank will not have room to lower its Selic



rate. It will strain GDP growth in 2023. The central bank chief Roberto Campos Neto cited a likely restoration of taxes on fuels as one of the main factors behind his forecast of 5% inflation in 2023.

The latest data showed the annual inflation rate eased to 5.8% in December 2022, down from 5.9% in November 2022. The inflation target for 2023 was set at 3.25% and 3% for 2024, with a 1.5 percentage point tolerance margin in both cases. Brazil's central bank kept its key interest rate unchanged and expressed concern about the costs of taming rising inflation expectations fuelled by tensions with President Luiz Inacio Lula da Silva's new government. Policymakers held the benchmark Selic at 13.75% for the fourth time. In the central bank's assessment, it may have to keep rates steady "for a longer period" than previously expected.

The central bank's autonomy is under attack by Lula's new economic team, which criticized fiscal rules and questioned the central bank's independence. It raises doubts about the government's desire to bring inflation back to target. The current goal of 3% for 2024 and 2025 may be relaxed.

Brazil posted a \$62.3 billion trade surplus in 2022. In December, the trade surplus was \$4.8 billion. Total exports for the year also reached a record high of \$335 billion, a 19.3% growth, helped by a boost in prices in the agriculture and livestock sector. Meanwhile, Imports jumped 24.3%, record-breaking at \$272.7 billion.

Foreign direct investment in Brazil almost doubled in 2022 from the year before to its highest level in 10 years. Brazil's current account deficit was \$10.9 billion in

December. It is worse than the \$46.4 billion deficit from 2021, affected by significant shortages in services and factor payments.

Brazil's real will stay under pressure while the new government mulls fiscal reforms to allow for higher welfare spending. The currency, trading around 5.1 reals to the US dollar, is forecast to devalue to 5.3 to the dollar by the end of 2023 and to 5.4 to the dollar in 2024.

Argentina and Brazil were planning the world's second currency union after the euro. The idea is put on hold. The aim was to boost bilateral trade with a common unit of account. Under the plan, the currencies of both countries — the real in Brazil and the Argentine peso — would continue to exist; the new value unit, yet to be precisely defined, would serve to make trade between the two countries more efficient and reduce dependence on the US dollar. A monetary union is out of the question because Argentina and Brazil are very different regarding monetary and fiscal policies. Brazil has a floating exchange rate and an independent central bank. On the other hand, Argentina prints money at the president's order to balance the budget deficit. Brazil has more than \$300 billion (€276 billion) in foreign exchange reserves. On the other hand, Argentina owes more than \$40 billion to the International Monetary Fund. Without the IMF, Argentina would have long since become insolvent.

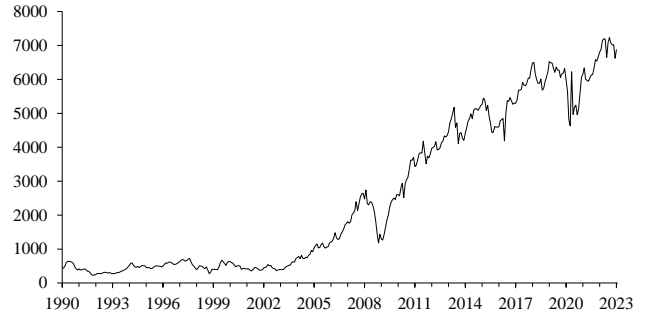
	<b>20</b>	<b>21</b>	<b>22</b>	<b>23</b>	<b>24</b>
GDP (%p.a.)	-3.9	4.6	2.9	0.0	2.0
Inflation (%p.a.)	4.5	8.5	8.0	5.5	4.0
Current A/c(US\$ bill.)	-7.6	-10.0	-10.0	-12.0	-20.0
Real/\$(nom.)	5.5	5.3	5.2	5.3	5.4

## Other Emerging Markets

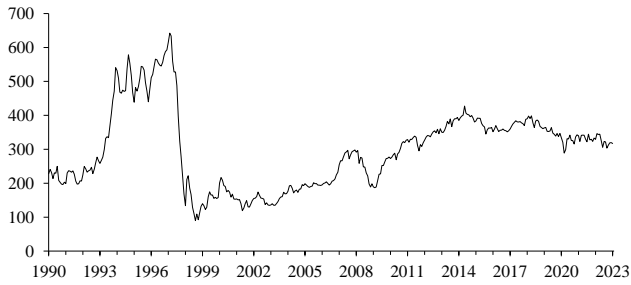
**Hong Kong: FT-Actuaries**



**Indonesia: Jakarta Composite**



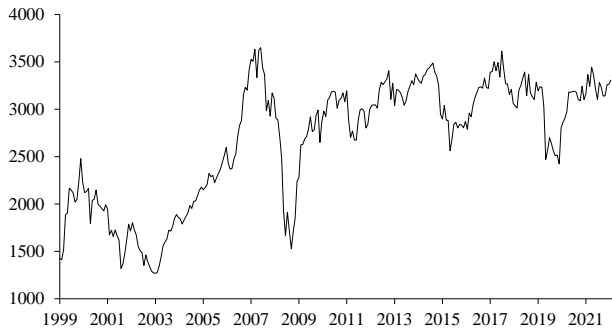
**Malaysia: FT-Actuaries  
(US\$ Index)**



**Thailand: Composite Index**



**Singapore: Straits Times Index**



**Philippines: Manila Composite**



# COMMODITY MARKETS

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**Commodity Price Index (Dollar)**  
(Economist, 2015 = 100)



**Oil Price: North Sea Brent (in Dollars)**



**Commodity Price Index (Sterling)**  
(Economist, 2015 = 100)



**Gold Price (in Dollars)**



**Commodity Price Index (Euro)**  
(Economist, 2015 = 100)



## UK FORECAST DETAIL

### Prices, Wages, Interest Rates and Exchange Rate Forecast (Seasonally Adjusted)

	Inflation % <sup>1</sup> (CPI)	Short Dated (5 Year) Interest Rates	3 Month Int. Rates	Nominal Exchange Rate (2005=100) <sup>2</sup>	Real Exchange Rate <sup>3</sup>	Real 3 Month Int. Rates % <sup>4</sup>	Inflation (RPIX)	Real Short Dated Rate of Interest <sup>5</sup>
2020	1.0	0.1	0.2	78.2	72.9	-1.3	1.5	-1.4
2021	2.5	0.4	0.1	81.4	78.0	-6.4	4.1	-5.7
2022	8.9	2.3	1.8	79.7	81.8	-5.5	11.4	-5.0
2023	5.0	4.3	4.4	78.1	82.7	0.7	8.1	0.6
2024	3.2	4.0	4.0	77.4	84.2	1.6	4.6	1.6
2025	2.0	3.0	3.0	76.8	84.9	1.0	2.8	1.0
2022:1	6.2	1.4	0.8	82.3	81.9	-8.4	8.4	-7.8
2022:2	9.2	2.1	1.4	80.2	81.8	-6.8	11.5	-6.1
2022:3	10.1	2.8	2.0	78.2	81.7	-4.7	12.4	-3.9
2022:4	10.7	3.0	3.0	78.1	81.6	-2.0	13.1	-2.0
2023:1	6.6	4.0	4.2	78.0	81.1	-0.3	11.0	-0.3
2023:2	5.5	4.1	4.5	77.5	82.6	0.8	9.0	0.4
2023:3	4.0	4.5	4.5	77.9	83.7	1.1	6.4	1.1
2023:4	4.0	4.5	4.5	77.5	83.6	1.3	6.0	1.3
2024:1	3.5	4.0	4.0	77.9	83.5	1.2	5.5	1.2
2024:2	3.2	4.0	4.0	77.3	84.3	1.5	5.0	1.5
2024:3	3.0	4.0	4.0	77.3	84.5	1.8	4.0	1.8
2024:4	3.0	4.0	4.0	77.1	84.3	2.0	4.0	2.0

<sup>1</sup> Consumer's Expenditure Deflator

<sup>2</sup> Sterling Effective Exchange Rate Bank of England

<sup>3</sup> Ratio of UK to other OECD consumer prices adjusted for nominal exchange rate

<sup>4</sup> Treasury Bill Rate less one year forecast of inflation

<sup>5</sup> Short Dated 5 Year Interest Rate less average of predicted 5 year ahead inflation rate

### Labour Market and Supply Factors (Seasonally Adjusted)

	Average Earnings (1990=100) <sup>1</sup>	Wage Growth <sup>2</sup>	Unemployment (New Basis) Percent <sup>3</sup>	Millions	Real Wage Rate <sup>4</sup> (1990=100)
2020	279.1	1.6	4.5	1.3	149.7
2021	295.0	5.9	4.5	1.3	154.8
2022	314.5	6.0	3.6	1.0	150.2
2023	327.5	5.4	3.5	0.9	150.7
2024	338.9	3.4	2.8	0.7	151.0
2025	338.9	3.0	2.8	0.7	152.6
2022:1	308.5	5.9	3.7	1.0	154.8
2022:2	307.5	6.2	3.8	1.1	149.0
2022:3	315.5	5.8	3.7	0.9	149.0
2022:4	317.2	6.3	3.7	0.9	147.8
2023:1	323.9	5.9	3.8	1.0	153.8
2023:2	321.0	5.6	3.6	1.0	149.2
2023:3	329.3	5.0	3.4	0.9	150.4
2023:4	329.9	5.1	3.2	0.9	149.4
2024:1	335.9	3.9	2.9	0.8	154.4
2024:2	331.3	3.7	2.8	0.7	150.0
2024:3	339.2	2.9	2.8	0.7	150.3
2024:4	339.8	3.1	2.8	0.7	149.5

<sup>1</sup> Whole Economy

<sup>2</sup> Average Earnings

<sup>3</sup> Wage rate deflated by CPI

**Estimates and Projections of the Gross Domestic Product<sup>1</sup> (£ Million 1990 Prices)**

	Expenditure Index	£ Million '90 prices	Non-Durable Consumption <sup>2</sup>	Private Sector Gross Investment Expenditure <sup>3</sup>	Public Authority Expenditure <sup>4</sup>	Net Exports <sup>5</sup>	AFC
2020	149.0	713432.6	427576.4	244157.8	199232.3	-33095.4	124438.5
2021	160.2	767344.3	453969.6	258155.2	224537.2	-36883.0	132434.5
2022	166.8	798577.4	473683.2	257528.5	228362.6	-23838.4	137158.1
2023	166.1	795317.2	475719.5	248799.5	225311.5	-18632.0	135881.3
2024	169.5	811597.0	489778.6	243503.8	232154.4	-15890.1	137949.7
2025	172.9	827988.2	505714.4	242189.8	239194.3	-18456.2	140654.2
2020/19	-11.0		-10.1	-16.2	-4.8		5.0
2021/20	7.5		6.2	-1.0	4.8		6.4
2022/21	4.2		4.3	-5.6	3.1		3.6
2023/22	-0.4		0.4	-1.5	3.0		-0.9
2024/23	2.0		3.0	9.9	3.0		1.5
2025/24	2.0		3.3	-16.2	-4.8		2.0
2022:1	167.2	200167.8	118589.6	68746.5	56345.5	-9205.1	34308.7
2022:2	167.4	200403.4	118225.6	62024.6	57458.7	-2866.9	34438.6
2022:3	165.2	197801.6	118034.3	62937.1	56975.0	-6092.0	34052.8
2022:4	167.2	200204.7	118833.7	63820.2	57583.3	-5674.5	34358.0
2023:1	165.8	198481.4	118824.7	69129.5	55701.1	-11222.9	33951.0
2023:2	166.4	199201.0	118812.9	60935.7	56116.4	-2756.3	33907.7
2023:3	166.3	199048.6	118801.0	59953.0	56538.3	-2249.7	33994.0
2023:4	165.9	198586.2	119280.9	58781.4	56955.7	-2403.2	34028.6
2024:1	167.7	200740.0	120213.3	67069.4	57389.5	-9638.5	34293.7
2024:2	169.4	202819.3	122254.5	59537.5	57819.9	-2462.3	34330.3
2024:3	170.2	203787.8	123116.9	58859.8	58254.1	-1824.2	34618.8
2024:4	170.6	204249.9	124193.9	58037.1	58690.9	-1965.1	34706.9

<sup>1</sup> GDP at factor cost. Expenditure measure; seasonally adjusted

<sup>2</sup> Consumers expenditure less expenditure on durables and housing

<sup>3</sup> Private gross domestic capital formation plus household expenditure on durables and clothing plus private sector stock building

<sup>4</sup> General government current and capital expenditure including stock building

<sup>5</sup> Exports of goods and services less imports of goods and services

**Financial Forecast**

	PSBR/GDP % <sup>1</sup>	GDP <sup>1</sup> (£bn)	PSBR (£bn) Financial Year	Current Account (£ bn)
2020	15.6	2068.0	312.4	-67.5
2021	5.6	2413.9	132.4	-34.3
2022	5.8	2674.6	156.6	-111.5
2023	4.5	2792.1	124.9	-24.2
2024	2.0	2940.6	59.5	-14.7
2025	0.1	3087.7	3.2	1.5
2022:1	1.6	633.5	10.1	-46.5
2022:2	7.5	655.7	49.1	-35.1
2022:3	3.6	662.9	23.9	-19.4
2022:4	8.5	686.5	58.4	-10.5
2023:1	3.8	669.5	25.2	-9.6
2023:2	4.7	688.4	32.5	-9.8
2023:3	4.6	694.7	31.8	-3.3
2023:4	4.3	708.7	30.4	-1.5
2024:1	4.3	700.3	30.2	-7.3
2024:2	2.3	723.6	16.3	-8.6
2024:3	1.9	732.9	14.1	0.1
2024:4	1.9	751.8	14.6	1.1

<sup>1</sup> GDP at market prices (Financial Year)

## WORLD FORECAST DETAIL

### Growth Of Real GNP

	2019	2020	2021	2022	2023	2024
U.S.A.	2.2	-2.8	5.9	2.1	0.7	1.2
U.K.	1.4	-11.0	7.5	4.2	-0.4	2.0
Japan	-0.4	-4.3	2.2	1.0	1.1	1.1
Germany	1.1	-3.7	2.6	1.9	-0.3	1.4
France	1.9	-7.9	6.8	2.5	0.3	0.6
Italy	0.5	-9.1	6.6	3.3	-0.1	0.3

### Growth Of Consumer Prices

	2019	2020	2021	2022	2023	2024
U.S.A.	1.8	1.3	4.7	8.0	3.9	2.5
U.K.	1.7	1.0	2.5	8.9	5.0	3.2
Japan	0.5	0.0	-0.2	2.5	2.1	1.2
Germany	1.4	0.5	3.1	7.9	6.2	2.7
France	1.1	0.4	1.7	5.4	4.0	2.0
Italy	0.6	-0.1	1.9	7.6	5.0	2.4

### Real Short-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	0.2	-4.6	-7.1	-1.7	2.4	2.0
U.K.	-0.7	-1.3	-6.4	-5.5	0.7	1.6
Japan	0.1	0.3	-2.4	-2.1	-1.1	-1.4
Germany	-0.9	-3.6	-8.5	-5.9	0.4	0.5
France	-0.8	-2.2	-6.0	-3.7	1.1	0.8
Italy	-0.3	-2.4	-8.2	-4.7	0.7	0.7

### Nominal Short-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	1.5	0.1	0.1	2.2	4.9	4.0
U.K.	0.8	0.2	0.1	1.8	4.4	4.0
Japan	0.1	0.1	0.1	0.0	0.1	0.1
Germany	-0.4	-0.5	-0.6	0.3	3.1	2.8
France	-0.4	-0.5	-0.6	0.3	3.1	2.8
Italy	-0.4	-0.5	-0.6	0.3	3.1	2.8

### Real Long-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	-2.2	-3.3	-2.1	1.3	1.5	1.2
U.K.	-0.4	-1.4	-5.7	-5.0	0.6	1.6
Japan	-1.1	-1.3	-1.7	-1.5	-1.1	-1.3
Germany	-4.3	-5.0	-4.4	-0.9	0.1	0.0
France	-2.6	-3.3	-2.9	-0.6	0.9	0.7
Italy	-2.0	-3.3	-2.6	0.3	2.3	2.2

### Nominal Long-Term Interest Rates

	2019	2020	2021	2022	2023	2024
U.S.A.	1.9	0.9	1.6	3.8	3.6	3.2
U.K.	0.6	0.1	0.4	2.3	4.3	4.0
Japan	0.0	0.0	0.1	0.2	0.5	0.5
Germany	-0.2	-0.6	-0.2	2.1	2.3	2.1
France	0.1	-0.3	0.2	1.8	2.9	2.7
Italy	1.4	0.5	1.2	3.0	4.4	4.2

### Index Of Real Exchange Rate (2010=100)<sup>1</sup>

	2019	2020	2021	2022	2023	2024
U.S.A.	117.1	118.7	116.1	128.3	128.0	128.5
U.K.	99.5	99.6	106.5	111.8	113.0	115.0
Japan	77.0	77.8	71.0	59.9	59.2	59.3
Germany	96.0	97.1	97.9	95.0	95.1	95.4
France	93.9	94.7	94.0	89.6	89.5	89.0
Italy	95.0	95.4	95.1	91.6	91.3	89.9

<sup>1</sup> The real exchange rate is the domestic price level relative to the foreign price level converted into domestic currency. A rise in the index implies an appreciation in the real exchange rate.

### Nominal Exchange Rate

(Number of Units of Local Currency To \$1)

	2019	2020	2021	2022	2023	2024
U.S.A. <sup>1</sup>	122.52	124.77	119.77	127.34	126.90	127.40
U.K.	1.28	1.29	1.37	1.22	1.21	1.24
Japan	109.10	106.60	110.45	133.10	136.20	137.80
Eurozone	0.89	0.87	0.85	0.95	0.98	0.99

<sup>1</sup> The series for the USA is a nominal broad U.S dollar index (2010=100); the series for the UK is \$ per £

\* Forecasts based on the Liverpool World Model